CLAIMS

What is claimed is:

1. A method comprising:

operating a first processor connected with a first bus and a second bus wherein the first processor controls the first bus;

operating a second processor connected with the first bus and the second bus wherein the second processor controls the second bus;

detecting faults via hardware associated with said first processor and said second processor; and

responsive to an occurrence of a fault in said first processor, transferring control of said first bus to said second processor via hardware associated with said first processor and said second processor.

2. The method of claim 1, wherein said operating a first processor comprises:

initializing the processor;

determining whether the processor is designated to operate in the active mode or the backup mode;

responsive to the processor being designated to operate in the active mode, performing an active mode boot process;

responsive to the processor being designated to operate in the backup mode, performing a backup mode boot process; and

performing system host functions.

3. The method of claim 2, wherein said determining whether the processor is designated to operate in the active mode or the backup mode is based on preconfigured information in the processor's BIOS.

4. The method of claim 2, wherein said active mode boot process comprises:
building a coherent universal map of devices connected with the first bus and the second bus;
determining whether the active mode is a split mode or a cluster mode;
if the active mode is a split mode, starting drivers on said second bus if all drivers are compatible, and transitioning into a cluster mode if not all drivers are compatible;
if the active mode is a cluster mode, starting all compatible drivers on said second bus; and
if the active mode is neither split mode or cluster mode, assuming a single host operation mode and starting all compatible drivers on the first bus and the second bus.

5. The method of claim 4, wherein said determining whether the active mode is a split mode or a cluster mode is based on preconfigured information in the processor's BIOS.

6. The method of claim 2, wherein said backup mode boot process comprises:
requesting a universal map of devices connected with said first bus and said second bus;
determining whether a split mode response has been received from the second processor;
if a split mode response has not been received,
receiving a coherent map of devices connected said second bus from said second processor,
entering a warm standby mode, and

loading all compatible drivers for devices connected with said first bus and placing them into a pending state; and

if a split mode response has been received,

determining whether a split mode request from the second processor to the first processor has been successful,

if the split mode request has been successful, determining whether all drivers for devices on the first bus are compatible,

starting all registered device drivers on said second bus if all drivers are compatible, and

transitioning into a cluster mode and loading and starting all drivers for said second bus is not all loaded drivers are compatible, and

if the split mode request has not been successful,

transitioning into a cluster mode, and

loading and starting all drivers for devices connected with said first bus.

7. The method of claim 1, wherein said transferring control of said first bus to said second processor comprises:

suspending control of and disconnecting said first processor from said first bus;

sending a switch-over message to said second processor; and

activating device drivers on the second processor to take control of bus devices.

8. The method of claim 1, wherein said bus is a CompactPCI bus.

9. The method of claim 8, wherein said first processor and said second processor comprise Redundant System Slot (RSS) cards.

10. A system comprising:

a first processor connected with a first bus operating in an active mode so that the first processor controls the first bus;

a second processor connected with a second bus operating in an active mode so that the second processor controls the second bus; and

hardware associated with said first processor and said second processor to detect faults in the processors transfer control of said first bus to said second processor via hardware associated with said first processor and said second processor responsive to detection of a fault.

11. The system of claim 10, wherein said first processor:

determines whether the processor is designated to operate in the active mode or the backup mode;

responsive to the processor being designated to operate in the active mode, performs an active mode boot process;

responsive to the processor being designated to operate in the backup mode, performs a backup mode boot process; and

performs system host functions.

12. The system of claim 11, wherein said determining whether the processor is designated to operate in the active mode or the backup mode is based on preconfigured information in the processor's BIOS.

13. The system of claim 11, wherein said active mode boot process comprises:

building a coherent universal map of devices connected with the first bus and the second bus;

determining whether the active mode is a split mode or a cluster mode;

if the active mode is a split mode, starting drivers on said second bus if all drivers are compatible, and transitioning into a cluster mode if not all drivers are compatible;

if the active mode is a cluster mode, starting all compatible drivers on said second bus; and

if the active mode is neither split mode or cluster mode, assuming a single host operation mode and starting all compatible drivers on the first bus and the second bus.

14. The system of claim 13, wherein said determining whether the active mode is a split mode or a cluster mode is based on preconfigured information in the processor's BIOS.

15. The system of claim 11, wherein said backup mode boot process comprises:

requesting a universal map of devices connected with said first bus and said second bus;

determining whether a split mode response has been received from the second processor;

if a split mode response has not been received,

receiving a coherent map of devices connected said second bus from said second processor,

entering a warm standby mode, and

loading all compatible drivers for devices connected with said first bus and placing them into a pending state; and

if a split mode response has been received,

determining whether a split mode request from the second processor to the first processor has been successful,

if the split mode request has been successful, determining whether all drivers for devices on the first bus are compatible,

starting all registered device drivers on said second bus if all drivers are compatible, and

transitioning into a cluster mode and loading and starting all drivers for said second bus is not all loaded drivers are compatible, and

if the split mode request has not been successful,

transitioning into a cluster mode, and

loading and starting all drivers for devices connected with said first bus.

16. The system of claim 10, wherein said transferring control of said first bus to said second processor comprises:

suspending control of and disconnecting said first processor from said first bus;

sending a switch-over message to said second processor; and

activating device drivers on the second processor to take control of bus devices.

17. The system of claim 10, wherein said bus is a CompactPCI bus.

18. The system of claim 17, wherein said first processor and said second processor comprise Redundant System Slot (RSS) cards.

19. A machine-readable medium having stored thereon data representing instructions which, when executed by a processor, cause the processor to:

operate a first processor connected with a first bus and a second bus wherein the first processor controls the first bus;

operate a second processor connected with the first bus and the second bus wherein the second processor controls the second bus;

detect faults via hardware associated with said first processor and said second processor; and

responsive to an occurrence of a fault in said first processor, transferring control of said first bus to said second processor via hardware associated with said first processor and said second processor.

20. The machine-readable medium of claim 19, wherein said operating a first processor comprises:

initializing the processor;

determining whether the processor is designated to operate in the active mode or the backup mode;

responsive to the processor being designated to operate in the active mode, performing an active mode boot process;

responsive to the processor being designated to operate in the backup mode, performing a backup mode boot process; and

performing system host functions.

21. The machine-readable medium of claim 20, wherein said determining whether the processor is designated to operate in the active mode or the backup mode is based on preconfigured information in the processor's BIOS.

22. The machine-readable medium of claim 20, wherein said active mode boot process comprises:

building a coherent universal map of devices connected with the first bus and the second bus;

determining whether the active mode is a split mode or a cluster mode;

if the active mode is a split mode, starting drivers on said second bus if all drivers are compatible, and transitioning into a cluster mode if not all drivers are compatible;

if the active mode is a cluster mode, starting all compatible drivers on said second bus; and

if the active mode is neither split mode or cluster mode, assuming a single host operation mode and starting all compatible drivers on the first bus and the second bus.

23. The machine-readable medium of claim 22, wherein said determining whether the active mode is a split mode or a cluster mode is based on preconfigured information in the processor's BIOS.

24. The machine-readable medium of claim 20, wherein said backup mode boot process comprises:

requesting a universal map of devices connected with said first bus and said second bus;

determining whether a split mode response has been received from the second processor;

if a split mode response has not been received,

receiving a coherent map of devices connected said second bus from said second processor,

entering a warm standby mode, and

loading all compatible drivers for devices connected with said first bus and placing them into a pending state; and

if a split mode response has been received,

determining whether a split mode request from the second processor to the first processor has been successful,

if the split mode request has been successful, determining whether all drivers for devices on the first bus are compatible,

starting all registered device drivers on said second bus if all drivers are compatible, and

transitioning into a cluster mode and loading and starting all drivers for said second bus is not all loaded drivers are compatible, and

if the split mode request has not been successful,

transitioning into a cluster mode, and

loading and starting all drivers for devices connected with said first bus.

25. The machine-readable medium of claim 19, wherein said transferring control of said first bus to said second processor comprises:

suspending control of and disconnecting said first processor from said first bus;

sending a switch-over message to said second processor; and

activating device drivers on the second processor to take control of bus devices.

26. The machine-readable medium of claim 19, wherein said bus is a CompactPCI bus.

27. The machine-readable medium of claim 26, wherein said first processor and said second processor comprise Redundant System Slot (RSS) cards.